Feb. 1, 1949. R. W. BRENNER ET AL 2,460,732

GARMENT FINISHING DEVICE

Filed June 11, 1947 3 Sheets-Sheet 1

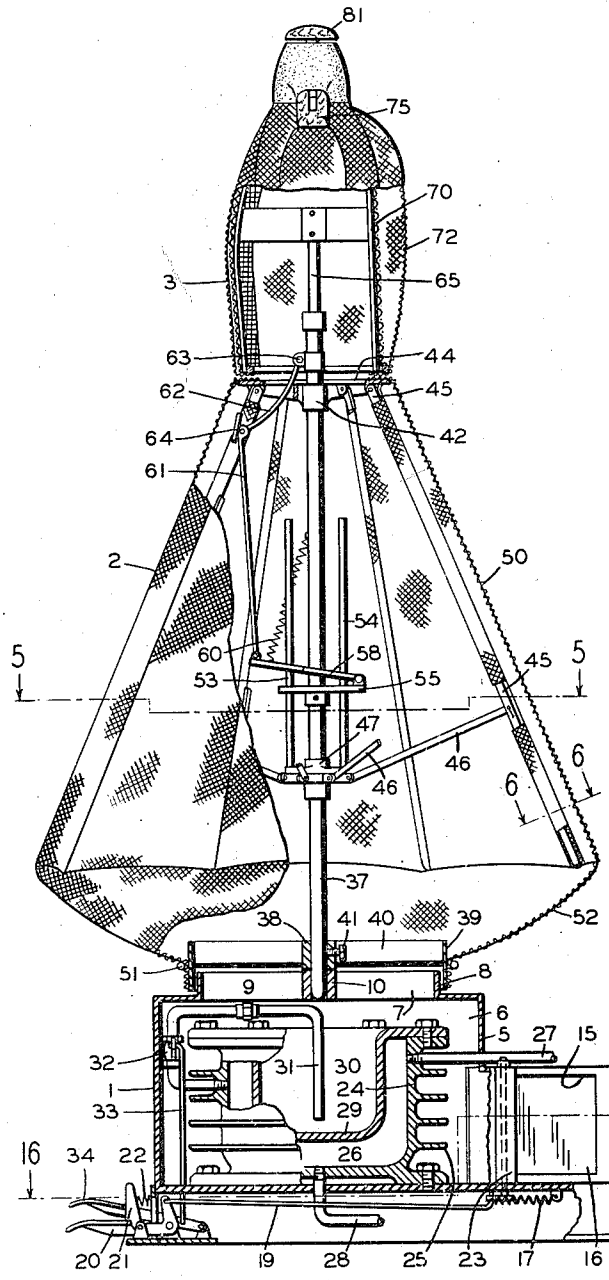


FIG.-1

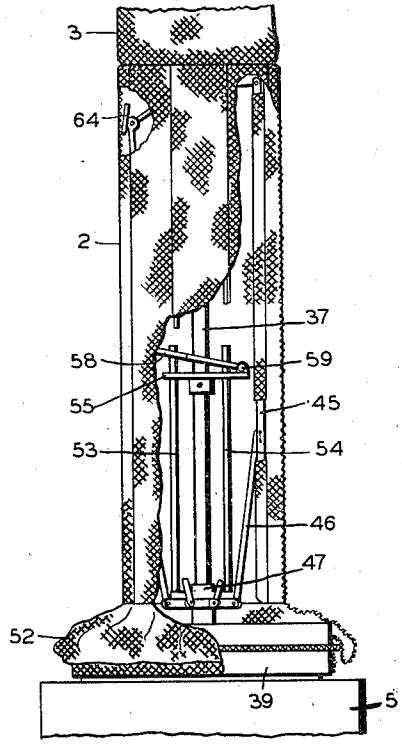


FIG.-2

INVENTORS
ROBERT W. BRENNER &
JOHN R. PETRE
BY Hyde, Mayer, Baldwin & Doren
ATTORNEYS

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GARMENT FINISHING DEVICE

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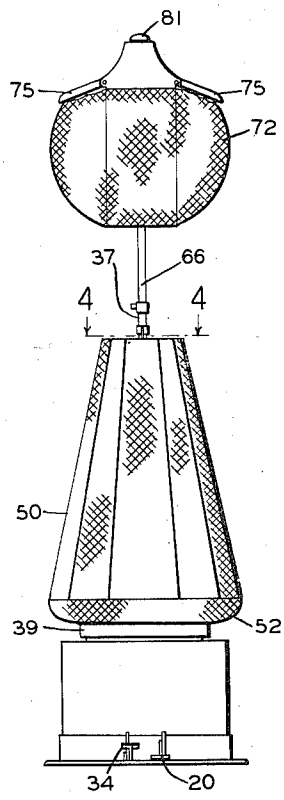


FIG.-3

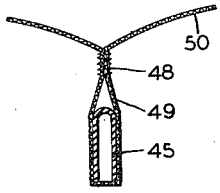


FIG.-6

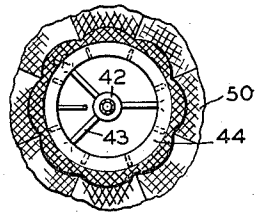


FIG.-4

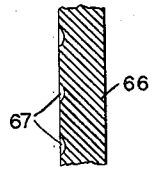


FIG.-12

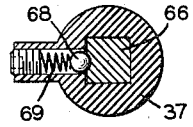


FIG.-11

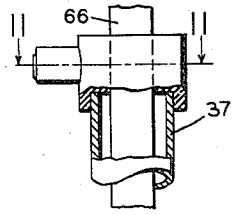


FIG.-10

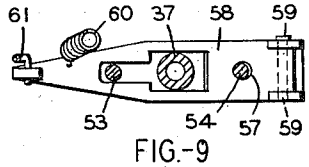


FIG.-9

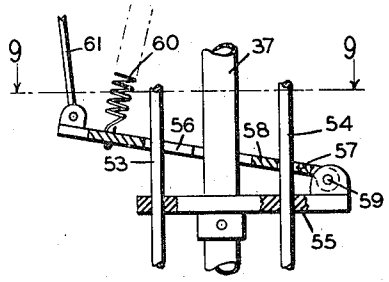


FIG.-8

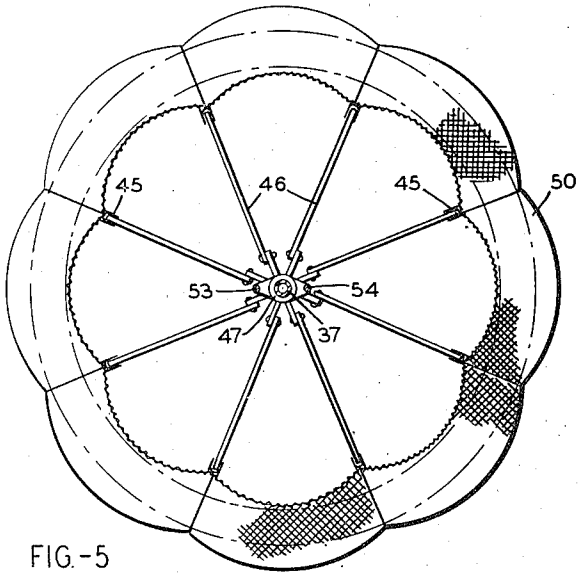


FIG.-5

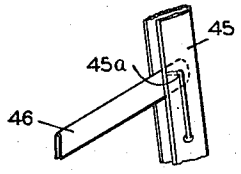


FIG.-7

INVENTORS
ROBERT W. BRENNER &
JOHN R. PETRE
BY Hyde, Meyer, Baldwin & Doren
ATTORNEYS

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GARMENT FINISHING DEVICE

Filed June 11, 1947 3 Sheets-Sheet 3

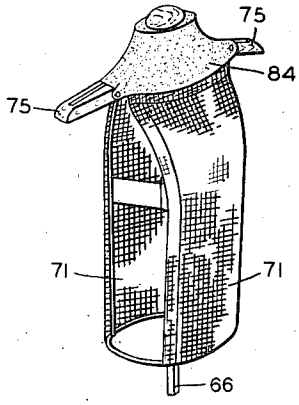


FIG.-13

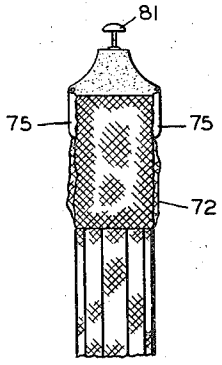


FIG.-15

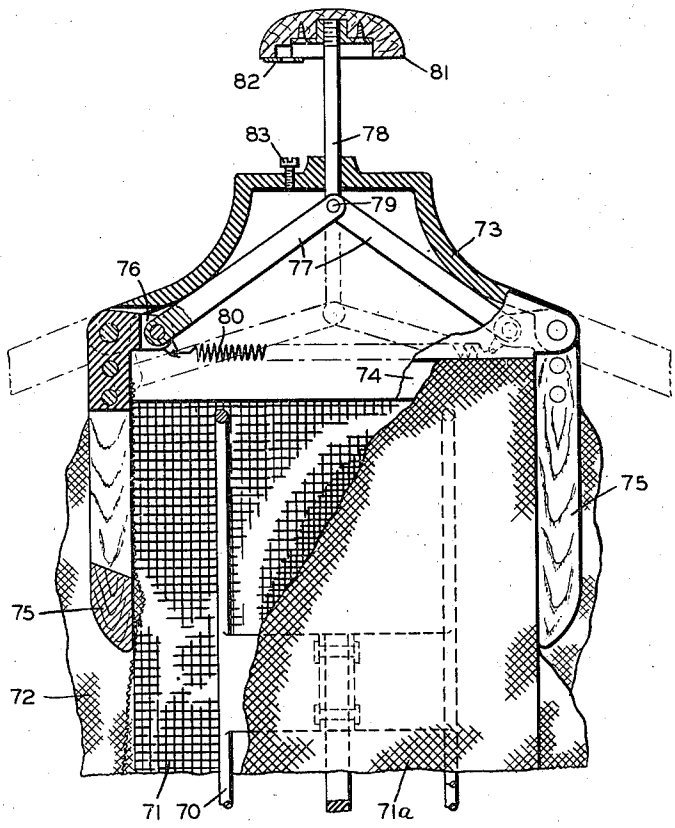


FIG.-14

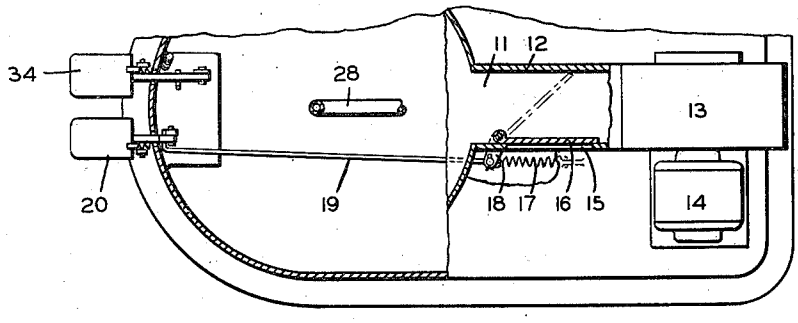


FIG.-16

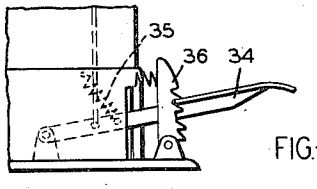


FIG.-17

INVENTORS
ROBERT W. BRENNER &
JOHN R. PETRE
BY Hyde, Mayes, Baldwin & Doran
ATTORNEYS

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UNITED STATES PATENT OFFICE

2,460,732

GARMENT FINISHING DEVICE

Robert W. Brenner, Foster, and John R. Petre, Cincinnati, Ohio, assignors to The American Laundry Machinery Company, Cincinnati, Ohio, a corporation of Ohio

Application June 11, 1947, Serial No. 753,950

8 Claims. (Cl. 223—70)

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This invention relates to garment finishing devices, such as are used for steaming, drying and otherwise finishing dresses, coats and other articles of wearing apparel. Speaking generally, the device is of that type in which the article to be finished is dressed upon an expansible form by means of which either steam or hot air may be forced through the garment to set its shape and improve its external appearance.

One object of the invention is to provide improved and more positive and convenient means for producing and controlling bag expansion and for enabling the form, with the garment dressed thereon, to be rotated about a vertical axis so that any side thereof may be presented to the operator.

Another object is to improve the form and arrangement of the top section upon which the body portion of the garment is dressed, and more particularly in such fashion as to enable the device to accommodate either extra long or small dresses and nevertheless with sufficient backing for all parts of the garment, thus avoiding wrinkles or an unfinished appearance.

Still another object is to provide an improved garment finishing form including an extensible top section, a rigid bosom support, collapsible or adjustable shoulder supports and a shaped neck support, as well as other features hereinafter described more in detail.

Further objects of the invention in part are obvious and in part will appear more in detail hereinafter.

In the drawings, which represent one suitable embodiment of the invention,

Fig. 1 is a side elevation, partly broken out and in section, showing the form inflated and expanded;

Fig. 2 is a similar view of a part of the form, with the bag deflated or collapsed;

Fig. 3 is a front elevation, on a smaller scale, showing the top expanded and the shoulder pieces erected;

Fig. 4 is a full scale sectional plan view on the line 4—4, Fig. 3;

Fig. 5 is a sectional plan view on the line 5—5, Fig. 1, the dot-dash lines indicating the position of a skirt stretched on the form;

Fig. 6 is a detail sectional view, on a larger scale, on the line 6—6, Fig. 1, showing the form ribs and sheath;

Fig. 7 is an enlarged perspective view of a rib and arm joint;

Fig. 8 is a detail elevation, showing the rib holding or clamping mechanism;

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Fig. 9 is a sectional plan view on the line 9—9, Fig. 8;

Fig. 10 is a detail front elevation, partly broken out and in section, showing the mounting for the upper form member;

Fig. 11 is a detail section on the line 11—11, Fig. 10;

Fig. 12 is a sectional view of the extension bar which supports the upper form member;

Fig. 13 is a perspective view of the upper form member, the fabric cover therefor being omitted;

Fig. 14 is an enlarged front elevation, partly broken away and in section, of the upper form member, showing the shoulder supports collapsed;

Fig. 15 is a partial front elevation showing the form fully collapsed;

Fig. 16 is a sectional plan view on the line 16—16, Fig. 1; and

Fig. 17 is a detail view showing the steam control pedal and the latch therefor.

The finishing apparatus shown in the drawings includes a pedestal 1 on which is rotatably mounted a dress form consisting of a lower skirt supporting member, marked generally 2, and an upper body supporting member, marked generally 3. These parts will be described separately, in the order named.

The pedestal 1 includes a shallow hollow base 4 designed to rest upon the floor or other support and to house or enclose certain operating mechanism later described. Upon the base is mounted a casing 5 enclosing a hot air chamber 6 having a top discharge opening 7 surrounded by a ring or flange 8. Radial spokes 9 within the ring support a heavy collar 10 which serves as the support for the form.

At one side the casing 5 is provided with an air supply opening 11 (Fig. 16) communicating with the discharge passage in conduit 12 from an air pump or blower 13, on the casing of which is supported the blower driving electric motor 14. A side opening 15 in conduit 12, which is normally open, may be closed at will by the operator, by means of a pivoted damper 16 biased to open position by spring 17 and having an arm 18 connected by link 19 to a foot treadle 20 (Fig. 1). This treadle, when depressed, may be releasably latched down by a latch 21, biased toward latching position by spring 22.

When the damper 16 lies in the normal dot-dash position, Fig. 16, the air flowing through blower 13 is deflected by the damper outwardly through the opening 15, and is not supplied to the heating chamber. This deflected air stream

may be directed away from the operator by a deflector plate 23 outside the opening.

By depressing treadle 20, the damper is moved to the full line position, Fig. 16, when all air passing through the blower is delivered to the heating chamber, and then to the garment. Adjustment of the treadle to intermediate positions may be resorted to for varying the quantity of the air supply. When the treadle is fully depressed, as shown in Fig. 1, the latch 21 automatically moves to latching position, from which it may be kicked off by the operator's foot to release the damper and enable it to return to normal position.

Within heating chamber 6 is a steam heater for the air supply. This comprises a hollow steam pot 24, ribbed externally at 25, and provided with a steam chamber 26 to which steam is supplied by a conduit 27, the condensate being conducted to a suitable steam trap (not shown) by way of discharge pipe 28. The inner wall 29 of the steam pot is of dish shape, providing a heated surface exposed to the cavity 30 into which extends the end of a steam pipe 31. This communicates, by way of normally closed whistle valve 32, with the steam chamber 26. Valve 32 is connected by link 33 with an operating treadle 34 (Fig. 17) biased upwardly by spring 35 and capable of being depressed to open the valve. A spring pressed multiple-tooth latch 36 holds the treadle in any one of several depressed positions, thus to maintain steam supply to the heated surface, at any desired rate. Condensate coming with the steam or formed in cavity 30 is vaporized by its heated floor, so that only dry steam rises through opening 7. Latch 36 may be released in the same manner as latch 21.

Assuming that the steam supply to conduit 27 is turned on, air supplied to the chamber 6 by the blower is heated as it flows past the steam pot, and is discharged upwardly through the opening 7. Dry steam may also be discharged through said opening by opening the whistle valve 32. Both air and steam enter the chamber within the hollow skirt portion of the form now to be described, and are thus distributed by it for flow to and through a garment dressed upon the form.

The skirt supporting member 2 of the form consists of a frame and a flexible pervious bag attached thereto. The frame includes a strong central tubular shaft 37, upon the lower end portion of which is adjustably mounted the sleeve form bearing hub 38 of a ring 39 attached to the hub by spokes 40. Bearing hub 38 is fixed to shaft 37 by a set screw 41 in such position that the shaft end enters hub 10 when the bearing sleeve rests upon the hub. This arrangement enables the form to be readily turned about the vertical axis, although the friction between members 10, 38 holds the form in any position and does away with the latches that might be necessary with a ball bearing mount, for example. Ring 39 closely hugs or fits ring 8, to effectively seal the joint between them against material air or steam leak.

Upon the upper end of shaft 37 is mounted a bag supporting member consisting of a hub 42 fastened to the shaft, radiating spokes 43 (Fig. 4) and an escalloped ring 44. To the ring is pivotally connected a series of depending ribs 45, each connected at a detachable joint 45a, Fig. 7 (like the ribs of an umbrella), to a downwardly inclined radial arm 46 pivoted to a sleeve or ring form slider 47 on the shaft 37. The ribs are moved inwardly to contract the form by downward movement of the slider on the shaft.

Each rib of the expansible and contractible frame is enclosed by stitching 48 (Fig. 6) within an elongated sheath or envelope 49 of an elongated fabric bag 50, the envelope being closed at its lower end. Bag 50 is made of any suitable strong flexible porous material, such as a web of muslin or sheeting, its open lower end fitting snugly around the outer ring 39, to which it may be removably secured by a coil spring 51. Between the ring 39 and the lower end or hem portion of the skirt forming portion of the bag we provide an expansion section 52 of surplus material, while the open narrower upper end of the bag is drawn over the escalloped ring 44 and is held in place by a draw string (not shown). When the bag is expanded by the air pressure within it, the ribs 45 limit outward bag movement, but the extra material between adjacent ribs balloons or bulges outwardly in escalloped or arched form, as shown in Fig. 5.

Means is provided for operating the sliding collar 47. For this purpose said collar carries two rods 53, 54, which slide freely in openings in a guide plate 55 fixed to post 37, and which also extend through openings 56, 57 in a lock plate 58 hinged at 59 to plate 55 and biased upwardly toward the inclined position shown in Fig. 8 by a tension spring 60. Lock plate 58 is pivotally connected, at its outer end, to one end of a toggle link 61, the cooperating link 62 therefor being pivoted at 63 to a fixed part of post 37. At the toggle knuckle is located a good sized thumb plate 64 adapted for depression by the operator to more or less straighten the toggle and release the lock.

The locking mechanism described operates somewhat after the manner of a transom lock. In the normal position of the parts, with spring 60 fully effective on lock plate 58, rise of rods 53, 54 and ring 47 and outward movement of ribs 45 are prevented and bag expansion is limited. Bag collapse is not possible because spring 60 prevents rods 53, 54 from sliding downwardly through the lock plate until release button 64 is pressed. Then, when no air or steam is being supplied to the bag, the weight of the parts, including the bag, ribs and ring 47 is sufficient to collapse the bag. Or, it may be collapsed by the effort of the operator against the air or steam pressure. But, when plate 64 is depressed to release the lock, air pressure or steam pressure within the bag will expand it so far as outward movement of the ribs is permitted, i. e., to a point where the rods 46 extend horizontally.

The arrangement described supplies unusually simple and convenient means for controlling bag expansion during a garment finishing operation. While the control button or plate 64 is within the bag and hence invisible to the operator, it is located at the front of the form just below the waist line and hence at a spot where he can always strike it without hesitation.

Assuming the bag fully collapsed, as in Fig. 2, with a garment dressed upon it ready for finishing, the operator first turns on the air supply by depressing treadle 20. Then, with his hand, he taps repeatedly on the control button 64, each tap momentarily releasing the lock and permitting some, but not total, expansion of the bag. In a few seconds, by repeated trials, always with expansion limited and under full control, he permits the bag to expand until it comfortably fills the garment, contacting with it, of course, only

at the crests of the bulges or arches between the ribs 45. In this manner it is possible to insure that the garment is not unduly stretched, that no wrinkles are produced, and that all in all the garment is not distorted. After turning off the air, the steam valve is opened to steam the garment, its surface is brushed, its lay is corrected if necessary, and, finally, the steam is turned off and hot air is supplied to dry the garment, as is usual. When fully dry, the air is turned off and the garment is removed.

The present apparatus may also include an upper or body supporting member which cooperates with the bag in finishing coats, dresses or other full length garments. This member is marked generally 3, in Fig. 1. It includes a central supporting post extension 65, of square cross section, having a lower end portion 66 designed to fit and enter a like shaped recess in the upper end of post 37. Several recesses 67 (Figs. 11, 12) are spaced along one side of the extension 65 to receive a yieldable latch ball 68 biased by spring 69, enabling the body supporting member 3 of the form to be adjusted to various levels with reference to the skirt-supporting member 2, as shown in Fig. 3. By this means the form as a whole may be lengthened to take care of an unusually long dress, for example.

The rod extension 65 supports a light hollow frame including reinforcing rods 70 upon which are mounted panels 71 made of hardware or wire cloth and shaped to simulate the conventional torso. The front, or bosom, in addition may have a covering 71*a* of fine copper screen to provide a fairly smooth surface which will not mark the garment.

A flexible porous cloth bag 72 covers the upper section from the neck line to the waist. But it is not free to expand in all directions since it is fastened to the entire bosom or front panel, being simply a smooth, tightly fitting cover therefor. The sides and back, however, are loose and full and are inflatable, as shown in Figs. 1 and 3. The rigid bosom supplies a firm backing against which lapels, pockets, etc. may be laid smoothly for superior finishing.

Fig. 3 shows the top inflated, even though widely separated from the bottom. This is possible because ring 44 is open at its center, and the garment waist closes the gap between sections 2 and 3, so that both air and steam flow freely to the space within the top section and will both fully expand it and supply the excess necessary for steaming and drying.

Fig. 14 also shows shoulder supports of collapsible form and a neck support, both arranged to correctly shape a wide range of sizes, the two being combined in a single unit.

The body of the unit is a hollow aluminum casting 73 shaped externally to support the neck and part of the shoulders of the garment. Internally it has a shallow annular recess 74 along its front, sides and back, to permit it to be smoothly joined to the bosom and back of the body form.

Upon member 73 are pivotally mounted two shoulder pieces or bars 75, each having a short lateral arm 76 pivoted to one of two toggle links 77 joined together and to an operating rod 78 at 79. Shoulder pieces 75 are biased to collapsed or retracted position by a tension spring 80, but may be extended or adjusted outwardly by pressing down on a knob or handle 81 loosely threaded upon the upper end of rod 78. This knob has a slotted latch plate 82 on its under face which, by rotation of the knob when depressed, may be engaged with the head of a screw 83 on the casting 73, to releasably hold the shoulder pieces extended in the position shown in dot-dash lines, Fig. 14. The cover cloth bag may be attached to the lower surfaces of arms 75 so that outward adjustment of said arms assists in bringing the bag fully up into the shoulders.

It should be noted that the entire neck and shoulder supporting unit or assembly lies outside of bag 72. Also condensation of moisture on these parts is minimized by forming the shoulder arms of wood and covering the exterior metal surfaces with flocking to produce a suede-like surface, indicated at 84, Fig. 13.

The apparatus described is of simple form, may be readily adjusted or adapted either to long or to short garments, or to garments of various sizes, enables the operator to prepare the garment for finishing by the exercise of controlled bag expansion, supplies a rigid bosom against which lapels or pockets may be laid, properly supports and shapes the neck and shoulders, and enables the garment to be rotated about the vertical axis for access to all sides. Other advantages of the invention will be apparent to those skilled in the art.

What we claim is:

1. Garment finishing apparatus of the character described, comprising a skirt supporting member including a flexible porous lower bag upon which the skirt portion of a garment may be dressed for finishing, a support for said bag, means for supplying a treating fluid under pressure to the space within said bag, and an upper body supporting member separate from the skirt supporting member and separably connected thereto, said body supporting member including foraminous front and back walls shaped to simulate the bosom and back of the torso and spaced apart to provide side openings, and a flexible porous upper bag mounted upon and enclosing said walls.

2. Garment finishing apparatus of the character described, comprising a skirt supporting member including a flexible porous lower bag upon which the skirt portion of a garment may be dressed for finishing, a support for said bag, means for supplying a treating fluid under pressure to the space within said bag, and an upper body supporting member separate from the skirt supporting member and separably connected thereto, said body supporting member including foraminous front and back walls shaped to simulate the bosom and back of the torso and spaced apart to provide side openings, and a flexible porous upper bag mounted upon and enclosing said walls, said body supporting member being adjustable vertically with reference to the skirt supporting member to accommodate garments varying in length.

3. Garment finishing apparatus of the character described, comprising a skirt supporting member including a flexible porous lower bag upon which the skirt portion of a garment may be dressed for finishing, a support for said bag, means for supplying a treating fluid under pressure to the space within said bag, and an upper body supporting member separate from the skirt supporting member and separably connected thereto, said body supporting member including foraminous front and back walls shaped to simulate the bosom and back of the torso and spaced apart to provide side openings, and a flexible

porous upper bag mounted upon and enclosing said walls, the lower bag having a top opening through which the treating fluid flows to and through the space within the upper bag.

4. In garment finishing apparatus, a device for supporting and finishing the body covering portion of a garment, comprising a hollow frame having foraminous bosom and back walls shaped to simulate the torso, said walls being rigidly connected and spaced apart at their side edges, a flexible porous bag enclosing said frame and secured to the bosom forming wall thereof but free to expand elsewhere from the frame, means for supplying a treating fluid under pressure to the space within said frame, and a neck and shoulder unit secured to the frame and mounted above its torso simulating walls, said unit including a neck supporting member, adjustable shoulder supporting bars movably mounted thereon, and operating means for said bars, all parts of said unit lying externally of the bag.

5. Garment finishing apparatus of the character described, comprising a flexible, porous bag having a skirt supporting portion which flares downwardly toward an open lower end, means for supplying a treating fluid under pressure through the open end of said bag to the space within it, a central post supporting said bag, a series of ribs each pivotally mounted at their upper ends upon said post and extending downwardly and outwardly, said ribs being attached at intervals to the bag, and an operating device slidably mounted upon said post and provided with arms, one connecting it to each of said ribs, said arms extending upwardly from the device to the ribs when the bag is collapsed, whereby downward movement of said operating device moves the ribs inwardly and collapses the bag and upward movement expands it.

6. Garment finishing apparatus of the character described, comprising a flexible, porous bag having a skirt supporting portion which flares downwardly toward an open lower end, means for supplying a treating fluid under pressure through the open end of said bag to the space within it, a central post supporting said bag, a series of ribs each pivotally mounted at their upper ends upon said post and extending downwardly and outwardly, said ribs being attached at intervals to the bag, an operating device slidably mounted upon said post and provided with arms, one connecting it to each of said ribs, said arms extending upwardly from the device to the ribs when the bag is collapsed, whereby downward movement of said operating device moves the ribs inwardly and collapses the bag and upward movement expands it, a releasable lock operatively connected to said device and arranged when locked to prevent upward bag expanding movement thereof, and operator operated means for releasing said lock.

7. Garment finishing apparatus of the character described, comprising a flexible, porous bag

having a skirt supporting portion which flares downwardly toward an open lower end, means for supplying a treating fluid under pressure through the open end of said bag to the space within it, a central post supporting said bag, a series of ribs each pivotally mounted at their upper ends upon said post and extending downwardly and outwardly, said ribs being attached at intervals to the bag, an operating device slidably mounted upon said post and provided with arms, one connecting it to each of said ribs, said arms extending upwardly from the device to the ribs when the bag is collapsed, whereby downward movement of said operating device moves the ribs inwardly and collapses the bag and upward movement expands it, a releasable lock operatively connected to said device and arranged when locked to prevent upward bag expanding movement thereof, and operator operated means for releasing said lock, said last named means including a control device located within the skirt supporting portion of the bag near the waist line thereof in a position suitable for operation through the flexible bag material.

8. Garment finishing apparatus of the character described, comprising a flexible, porous bag having a skirt supporting portion which flares downwardly toward an open lower end, means for supplying a treating fluid under pressure through the open end of said bag to the space within it, a central post supporting said bag, a series of ribs each pivotally mounted at their upper ends upon said post and extending downwardly and outwardly, said ribs being attached at intervals to the bag, an operating device slidably mounted upon said post and provided with arms, one connecting it to each of said ribs, said arms extending upwardly from the device to the ribs when the bag is collapsed, whereby downward movement of said operating device moves the ribs inwardly and collapses the bag and upward movement expands it, a releasable lock operatively connected to said device and arranged when locked to prevent upward bag expanding movement thereof, means for yieldingly biasing said lock toward locked position, and operator operated means for momentarily releasing said lock, to thereby produce controlled bag expansion and accommodate the bag to any of various sizes of garments being finished.

ROBERT W. BRENNER.
JOHN R. PETRE.

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